

SCHOOL HEALTH MANUAL: ENVIRONMENTAL HEALTH

Last Reviewed March, 2001

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No.Name Miles per Hour Effect on Land

Environmental health has been a concern within the school setting for a long time. This section of the Manual is in the "developmental" stages, so that this presents a beginning overview. The following suggestions relate to "best management practices." The items included here give an idea of the scope of things to be considered. Additional items will include playground safety.

ASBESTOS - It is a best management practice to have asbestos remove by a licensed contractor. An aggressive effort to remove the material from schools would appear to have removed this hazard.

BUILDING STANDARDS - Building construction as approved by the Department of Education meets all criteria for heating, lighting, plumbing, electrical, safety, etc. Best management practices include: electric circuits are protected within ground fault interruption devices; hand washing facilities have with hot water tempering devices; there is a functioning sewage disposal system, safe solid waste storage containers, and an inspected potable water supply source.

CHEMICAL SAFETY - Maintain a record of safety data sheets for all chemicals used in the school. In labs, work should be done under an exhaust ventilation system. Eye wash sinks, fire extinguishers, sprinklers, etc. should be maintained in satisfactory working order.

HAND WASHING - Wash hands at frequent intervals and after activities where personal contact could contaminate food or other persons. Use washing facilities without stoppers and a supply of anti-bacterial soap. (See Communicable Diseases section.)

NOISE POLLUTION - The School environment is an uncommon source of health hazard in schools. There is concern for damage to hearing of students and teachers. Adult exposure to loud

music can be controlled by increasing the distance between adults and the source. Hearing is not considered to be as easily impacted in children. Schools should not allow individual music systems with headsets.

PESTICIDES, HERBICIDES AND FUNGICIDES - These materials should be maintained in a locked, approved safety storage closet.

PROTECTIVE CLOTHING - Disposable latex gloves must be used in handling special wastes, including all material containing blood products. (See Communicable Diseases section.)

RADON - Several rooms should be tested and at least one on each floor. Radon gas is inert and permeates the building through cracks in the basement floor slab. The integrity of the slab must be maintained.

SICK BUILDING SYNDROME - Where symptoms such as headache fatigue, malaise, etc., raise suspicion that air quality may be impacted by unknown air contaminants, a best management practice is to employ a consultant to evaluate air quality. Increasing ventilation is a safe short-term remedy that may become permanent upon the consultants recommendation. Children are particularly susceptible to poor air quality. Air filters should be replaced frequently, 2-4 times a year as approved by the Department of Education.

SOLID WASTE STORAGE - Solid waste, hazardous waste and special waste handling is containerization so that wastes do not come in contact with body parts. Underground (Fuel Act) Storage Tanks - State requirements include replacement of "illegal" tanks with approved oil storage methods. The fuel oil dealer provides tank replacement.

SWIMMING POOLS - It is best management practice to assign maintenance of pools to a single buildings custodian who cleans the pool daily on days of use and adjusts chlorine requirements by testing the water two times per day. One ppm of chlorine should be maintained. Monthly analysis for total coliform bacteria shall be performed as part of the regular maintenance.

WASTEWATER DISPOSAL - Public Sewers are normally trouble free or maintenance is provided by the sewer department. In unsewered areas the schools are served by a septic tank and subsurface absorption system. Have a contractor pump the septic tank at least every three years. Some schools have adopted a lagoon and spray process and wastewater should not come in contact with the public.

WATER SUPPLY - The Department of Human Services requirement for a public water supply by obtaining an assessment of the biological, physical and chemical quality of the supply, including nitrate, chloride, fluoride and coliform bacteria.

SAFE DRINKING WATER Department of Human Services, Division of Health
Engineering 207-287-2070

I. Introduction:

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974. The Act has been amended many times, and reauthorized in 1986 and 1996. The Act defines a "Public Water System" as any system serving 25 or more people for more than 60 days. The State Bureau of Health's Drinking Water Program, enforces the Safe Drinking Water Act within the State of Maine.

II. Testing

The SDWA requires testing in essentially 3 different areas:

1. Microbials

Most schools are required to test yearly for coliform bacteria. If coliform bacteria are detected, the system is required to collect 4 recheck samples. If any of the recheck samples are positive for coliform, the school would then have to post a notice that they failed more than one water test. If any of the samples are *E. coli* or Fecal Coliform positive, the school will be placed on a Boil Water Order. In either case, the school will then be required to collect one sample per month for a minimum of 6 months.

Some schools will also be required to test to see if they are influenced by surface water (lakes, streams, ponds, etc.). The SDWA requires these systems that meet a certain criteria to test for *Giardia* and *Cryptosporidium*.

2. Inorganics and Organics Testing

All schools are required to test for inorganics (arsenic, barium, cadmium, etc.) and organics (gasoline, fuel oil, etc.) at least once every 3 years. All systems are required to test for nitrates and nitrites at least once per year. All schools are required to collect an initial round of herbicide and pesticide samples. If a school is in a high risk area they would be required to test for herbicides and pesticides more frequently.

3. Lead and Copper

The SDWA requires all schools to collect samples for lead and copper poisoning from their water. These are called "First Draw" samples, because the water has to be allowed to sit in the pipes at least 6 hours. Generally, the lead and copper are not found in the source water, but are being corroded from the system's piping. School's failing lead and copper testing are required to do public notification, and to submit a corrosion control plan.

4. Other Testing

As of the date of this writing (August, 1996), it is expected that the USEPA will soon announce a new rule requiring Radionuclide (Radon) testing. Radon gas is found through out

Maine. The gas is dissolved in the water, becomes aerosol when a faucet is turned on, and is breathed in. The harmful effects of radon are do to breathing the radon, not by drinking.

III. Other Requirements of the SDWA

The SDWA also requires that a member of the Drinking Water Program perform a Sanitary Survey at least once every 3 years. The purpose of the survey is to review the system, make recommendations on how to improve the system, and to find any potential sources of contamination.

The last item is a Well Head Protection Program (WHPP). while not mandatory, if a school completes a WHPP, they would then be eligible for less stringent monitoring of certain organic contaminants. In some case the system would receive a waiver to a contaminant and never test again.

SAFETY: EYES SUGGESTED TYPES OF EYE PROTECTING DEVICES TO BE WORN IN THE EVENT OF EXPOSURE TO POTENTIAL EYE HAZARDS

POTENTIAL EYE HAZARD EYE PROTECTIVE DEVICE(s)

1. Caustic or explosive materials Goggle, flexible fitting, hooded ventilation; add plastic window face shield for severe exposure;
2. Dust producing operations Goggle, flexible fitting, hooded ventilation;
3. Electric arc welding Welding helmet in combinations with spectacles with eye cup or semi or flat-fold side shields;
4. Oxy-acteylene welding Welding goggle, eye cup type with tinted lenses; welding goggle, cover spec type with tinted lenses or tinted plate lenses;
5. Hot liquids and gases Goggle, flexible fitting, hooded ventilation; add plastic window face shield for severe exposure;
6. Hot solids Clear or tinted goggles or spectacles with side shields;
7. Molten materials Clear or tinted goggles and plastic or mesh window face shields;

8. Heat treatment or tempering Clear or tinted goggles or clear or tinted spectacles with side shields;
9. Glare operations Tinted goggles; tinted spectacles with side shields or welding goggles, eye cup or coverspec type with tinted lenses or plate lenses;
10. Shaping solid materials Clear goggles, flexible or rigid body; clear spectacles with side shields; add plastic window face shield for severe exposure.

TEMPERATURES: WIND CHILL FACTOR

THE BEAUFORT WIND SCALE

The scale was devised in 1805 by British Rear Admiral Sir Francis Beaufort, using numbers from 0-17, used to indicate wind speeds. the Beaufort scale is defined in terms of wind speeds measured 10 meters (about 33 feet) above the ground. The scale is sometimes used to estimate wind speeds.

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	No.	Name	Miles per Hour	Effect on Land
Beaufort				
0	Calm	Less than 1	Calm, smoke rises vertically.	
1	Light Air	1-3	Weather vanes inactive; smoke drifts with air.	
2	Light Breeze	4-7	Weather vanes active; wind felt on face; leaves rustle.	
3	Gentle Breeze	8-12	Leaves and small twigs move; light flags extended.	
4	Moderate Breeze	13-18		

9 Strong Gale 47-54 Slight damage to buildings; shingles blown off roof.

10 Whole Gale 55-63 Trees uprooted; considerable damage to buildings.

11 Storm 64-73 Widespread damage; very rare occurrence.

12-17 Hurricane 74 and above Violent destruction.

WIND CHILL CHART

This chart shows the cooling powers of wind on exposed flesh only. Other factors which enter into the development of frostbite are duration of exposure and adequacy of clothing protection. The "equivalent temperature" on the wind chill chart indicates approximately the temperature which, at calm wind conditions, produces the same sensation to exposed flesh as the existing temperature and wind combination.

Actual Thermostat Reading (F) Estimated wind speed in MPH 50 40 30 20 10 0 -10 -20 -30 -40 -50

Equivalent Temperature (F)

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LITTLE DANGER -----> INCREASING -----> TO GREAT DANGER	

(Wind speeds greater than 40 mph have little added effect.)

Find estimated/actual wind speed in left column and actual temperature at tip. Move down and across, and the intersection is the equivalent temperature. Precautions should be taken accordingly.

Description below chart indicates comparative danger of frostbite to exposed flesh. March, 2001